

WHAT IS CLAIMED IS:

1. An apparatus for folding a sheet material comprising:

- means for securing at least a portion of a sheet material to a rotatable plate in a plane parallel to the rotatable plate;

5 - a rotatable releasable clamp for securing at least a portion of the sheet in a first rotational position between the plate and clamp; and

- means for rotating the securement means, plate, and clamp so as to move the sheet from the first rotational position to a second rotational position, wherein, rotation from the first rotational position to the second rotational position forms a folded portion of the sheet over a
10 portion of the clamp.

2. The apparatus according to claim 1, wherein the securement means includes a rotatable releasable clamp having a plurality of extension members to secure at least a portion of the sheet material to the plate between at least two of the extension members.

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3. The apparatus according to claim 1, wherein the securement means includes at least one vacuum plate to secure at least a portion of the sheet to the rotatable plate.

4. The apparatus according to claim 1, further including means for sliding the clamp out and
20 away from the folded portion.

5. The apparatus according to claim 4, further including means for repositioning the clamp on an outer portion of the folded portion.

6. The apparatus according to claim 5, further including means for pressing the sheet inward
5 toward the plate to crease the folded portion.

7. The apparatus according to claim 6, further including means for returning the sheet to the at least one of the first rotational position and second rotational position from the other of the first and second rotational position to form an additional folded portion.

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8. The apparatus according to claim 1, further including means for maintaining the secured portion of the sheet in parallel relation to at least a portion of an unsecured portion of the sheet when a portion of the sheet is folded over the clamp.

15 9. The apparatus according to claim 1, wherein the sheet material comprises an electrode sheet having at least one of an anode active material and a cathode active material disposed on at least one of a top surface and a bottom surface thereof.

10. The apparatus according to claim 9, further including means for removing active material
20 from at least one of the top surface and bottom surface of the folded portion of the electrode sheet.

11. A method for folding a sheet material comprising the steps of:

- providing a means for securing at least a portion of a sheet material to a rotatable plate in a plane parallel to the plate;

- providing a rotatable releasable clamp for securing at least a portion of the sheet in a first rotational position between the plate and clamp; and

- rotating the clamp, plate, and securement means and sheet so as to move the sheet from the first rotational position to a second rotational position, wherein, rotation from the first rotational position to the second rotational position forms a folded portion of the sheet over a portion of the clamp.

12. The method according to claim 11, wherein the step of providing a securement means includes the step of providing a rotatable releasable clamp having a plurality of extension members for securing the sheet material to the rotatable plate between at least two of the members.

13. The method according to claim 11, wherein the step of providing a securement means includes the step of providing a vacuum plate for securing at least a portion of a sheet material to the rotatable plate.

14. The method according to claim 11, further including the step of sliding the clamp out and away from the folded portion.

15. The method according to claim 14, further including the step of repositioning the clamp on an outer portion of the folded portion.

16. The method according to claim 15, further including the step of pressing the sheet inward
5 toward the plate to crease the folded portion.

17. The method according to claim 16, further including the step of returning the sheet to the at least one of the first rotational position and second rotational position from the other of the first and second rotational position to form an additional folded portion.

10 18. The method according to claim 11, further including the step of maintaining the secured portion of the sheet in parallel relation to at least a portion of an unsecured portion of the sheet when a portion of the sheet is folded over the clamp.

15 19. The method according to claim 11, wherein the sheet material comprises an electrode sheet having at least one of an anode active material and a cathode active material disposed on at least one of a top surface and a bottom surface thereof.

20 20. The method according to claim 19, further including the step of removing active material from at least one of the top surface and bottom surface of the folded portion of the electrode sheet.